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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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INTERNATIONAL BUSINESS MACHINES CORPORATION
9000 SOUTH RITA ROAD
TUCSON, AZ 85744

EXAMINER	
WALTER, CRAIG E	

ART UNIT	PAPER NUMBER
2188	

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/786,263	EMBERTY ET AL.	
	Examiner	Art Unit	
	Craig E. Walter	2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 February 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/25/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 25 February 2006 was fully considered by the examiner.

Drawings

2. The drawings were received on 25 February 2006. These drawings are deemed acceptable for examination.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 25-35 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. More specifically, the article of manufacture recited in these claims is directed to both statutory (i.e. EEPROMs), and non-statutory

(i.e. infrared signals) subject matter. Please refer to paragraph 0053 (page 21) of Applicant's original specification.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-4, 6, 25-28, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parks et al. (US Patent 6,598,174 B1), hereinafter Parks, in further view of Shea (US PG Publication 2004/0081087 A1).

As for claims 1 and 25, Parks teaches a method (and article of manufacture) for managing removable storage media, comprising:

determining that a first removable storage media on which data is stored needs to be replaced (col. 3, lines 16-28), said first removable storage media is identified by a persistent worldwide name (devices can be located via the use of WWN - col. 23 – lines 13-30);

creating a copy of said data on a second removable storage media (col. 3, lines 29-47);

Parks however fails to teach assigning the persistent worldwide name to the second removable media.

Shea however teaches a storage device for verifying the existence of a redundant fibre channel path. In his disclosure, Shea discusses verifying that a redundant path exists, and once that path is confirmed, the worldwide name is moved to a backup device (see abstract). Further evidence is provided in claim 6 in Shea's disclosure (the world wide name is moved to the backup device).

It would have been obvious to one of ordinary skill in the art at the time of the invention for Parks to further include Shea's verification of redundant fibre channel paths into his own storage unit replacement system. By doing so, Parks would have a means of providing his system with multiple paths to allow continued communications between a pair of nodes should one of them fail as taught by Shea in paragraph 0017, all lines. Note Shea further teaches moving the worldwide name to the backup storage as being a critical aspect to restoring the connection should a failure occur in the fabric – paragraph 0019, all lines. It is worthy to note that Parks specifically discusses applying his system to Fibre Channel SAN networks in col. 1, lines 54-63; and col. 3, lines 4-12.

As for claims 2 and 26, Shea teaches removing the persistent worldwide name from said first removable storage media (the name is moved, not copied, to the second device hence its removed from the first device – see abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention for Parks to further include Shea's verification of redundant fibre channel paths into his own storage unit replacement system. By doing so, Parks would have a means of providing his system with multiple paths to allow continued communications

between a pair of nodes should one of them fail, as taught by Shea in paragraph 0017, all lines. Note Shea further teaches moving the worldwide name to the backup storage as a critical aspect to restoring the connection should a failure occur in the fabric – paragraph 0019, all lines. It is worthy to note that Parks specifically discusses applying his system to Fibre Channel SAN networks in col. 1, lines 54-63; and col. 3, lines 4-12.

As for claims 3-4, 6 and 27-28, 30, Parks teaches upon detecting a condition, copying the data from a first storage device, to a second storage device (col. 3, lines 29-47). Park's apparatus allows for detection of performance degradation (conditions are detected that the storage device is experiencing reduced performance - see abstract). Further he discusses detecting a failing storage unit (see the brief description for Fig. 3). Lastly, Park's system allows for the system to detect when a upgrade is needed. More specifically, Park teaches using the performance of the storage device as a metric of determining when or if a device will fail. It is well known in the art that upgrading a storage device is needed when the performance of that unit is suffering. Parks system is capable of detecting this performance degradation, resulting in the replacement of the device.

6. Claims 5 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teaching of Parks (US Patent 6,598,174 B1) and Shea (US PG Publication 2004/0081087 A1), applied to claims 1 and 25 above, and in further view of Goodman et al. (US PG Publication 2003/0065684 A1), hereinafter Goodman.

As for claims 5 and 29, though the combined teachings of Parks and Shea disclose replacing the first storage media, they fail to teach using a library controller via a user interface to accomplish this task.

Goodman however teaches a system for logically assigning unique names to devices in a storage system. In his disclosure, Goodman teaches a library controller (Fig. 3, element 24) which interfaces with the user's host system (28) via an interface (29) – paragraph 0013, all lines.

It would have been obvious to one of ordinary skill in the art at the time of the invention for Parks to further include Goodman's system for assigning unique names to his storage system. By doing so, Parks would benefit by having a system that is capable of both uniquely assigning names to his storage devices, and capable of eliminating system downtime whenever the component is replaced as taught by Goodman in paragraph 0010, all lines.

7. Claims 7-9 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teaching of Parks (US Patent 6,598,174 B1) and Shea (US PG Publication 2004/0081087 A1), as applied to claim 1 and 25 above, and in further view of Tanaka (US Patent 6,813,685 B1).

As for claims 7-9 and 31-33, though the combined teachings of Parks and Shea meet the limitations of claims 1 and 25, they fail to meet the limitations of these three claims. Tanaka however teaches a system for storing data and controlling the writing of redundant data including:

at least one RAID device coupled to said processor, wherein said processor obtains said copy of said data by RAID parity calculations (Fig. 1, elements 12-1 through 12-n disclose a RAID device (col. 3, lines 9-21);

a backup storage device coupled to said processor, wherein said processor obtains said copy of said data from said backup storage device (data is further copied to the redundant data disk (Fig. 1, element 13).

one or more storage devices coupled to said processor, wherein said processor obtains said copy of said data from said one or more storage devices by reconstruction of data from said one or more sources (when data is recovered, the data must be reconstructed from more than one of the RAID disks in which the data is striped across).

It would have been obvious to one of ordinary skill in the art at the time of the invention for Parks to further include Tanaka's system for writing redundant data. By doing so, Parks would benefit by having a system in which access to both the data storing unit, and the redundant data storing unit can be comprehensively controlled by the controller. This effectively will lead to an enhancement in the reliability of the system, and more efficient communication as taught by Tanaka (col. 2, lines 6-22).

8. Claims 10-12 and 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teaching of Parks (US Patent 6,598,174 B1) and Shea (US PG Publication 2004/0081087 A1), as applied to claims 1 and 25 above, and in further view of Timpanaro-Perrotta (US PG Publication 2003/0177324 A1).

As for claim 10-11 and 34-35, though Parks teaches storing the worldwide name in the storage device (node), he fails to teach a cartridge memory (i.e. storage media) associated with the second device for storing the worldwide name.

Timpanaro-Perrotta however teaches a system for maintaining backup copies of file in a backup storage device, in which he teaches using a plurality of storage devices within his network, including tape cartridges (paragraph 0022, all lines).

As for claims 12, though Parks teaches copying from one media to another, he fails to teach copying from a first cartridge memory to a second cartridge memory.

Timpanaro-Perrotta however teaches a system for maintaining backup copies of file in a backup storage device in which he discusses using a plurality of storage devices within his network, including tape cartridges (paragraph 0022, all lines).

It would have been obvious to one of ordinary skill in the art at the time of the invention for Parks to further include Timpanaro-Perrotta's system of maintaining backup copies into his own system. By doing so, Parks would have a means of both optimizing the restore operation, and minimizing the time data is unavailable to users as taught by Timpanaro-Perrotta in paragraphs 0006-0007, all lines.

9. Claims 13-14 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (US PG Publication 2001/0047460 A1), hereinafter Kobayashi, in further view of Shea (US PG Publication 2004/0081087 A1).

As for claims 13 and 24, Kobayashi teaches a system for managing removable storage media comprising:

a first removable storage media for storing data (Fig. 1, element 114 – storage system 1);

a persistent worldwide name associated with said a first removable storage media (paragraph 0024, all lines – each node (i.e. storage system) stores worldwide unique identifiers);

a second removable storage media (Fig. 2, element 116 – storage system 2); a processor coupled to said first removable storage media and coupled to said second removable storage media (Fig. 1, element 101 – the host computer inherently possesses a processor), wherein said processor creates a copy of said data on said second removable storage media (paragraph 0021, all lines –computer is designed to copy data from the M-vol (112) to the R-vol (113) via the fibre channel (105))

Kobayashi fails to teach assigning the persistent worldwide name to the second removable media.

Shea however teaches a storage device for verifying the existence of a redundant fibre channel path. In his disclosure, Shea discusses verifying that a redundant path exists, and once that path is confirmed, the worldwide name is moved to a backup device (see abstract). Further evidence is provided in claim 6 in Shea's disclosure (the world wide name is moved to the backup device).

It would have been obvious to one of ordinary skill in the art at the time of the invention for Kobayashi to further include Shea's verification of redundant fibre channel paths into his own remote copy system. By doing so, Kobayashi would have a means of providing his system with multiple paths to allow continued communications between

a pair of nodes should one of them fail as taught by Shea in paragraph 0017, all lines. Note Shea further teaches moving the worldwide name to the backup storage as a critical aspect to restoring the connection should a failure occur in the fabric – paragraph 0019, all lines.

As for claims 14, Shea teaches removing the persistent worldwide name from said first removable storage media (the name is moved, not copied, to the second device hence its removed from the first device – see abstract)

Again, it would have been obvious to one of ordinary skill in the art at the time of the invention for Kobayashi to further include Shea's verification of redundant fibre channel paths into his own remote copy system. By doing so, Kobayashi would have a means of providing his system with multiple paths to allow continued communications between a pair of nodes should one of them fail as taught by Shea in paragraph 0017, all lines. Note Shea further teaches moving the worldwide name to the backup storage as a critical aspect to restoring the connection should a failure occur in the fabric – paragraph 0019, all lines.

10. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Kobayashi (US PG Publication 2001/0047460 A1) and Shea (US PG Publication 2004/0081087 A1) as applied to claims 13 and 24 above, and in further view of Parks (US Patent 6,598,174 B1).

As for claims 15-17, though the combined teachings of Kobayashi and Shea meet the limitations of claim 13, they fail to teach detecting failures, performance, or upgrading the storage devices. Parks however teaches a failure, performance, and

upgrade apparatus a storage unit replacement system for in non-redundant storage array. In his disclosure, Parks teaches upon detecting a condition, copying the data from a first storage device, to a second storage device (col. 3, lines 29-47). Park's apparatus allows for detection of performance degradation (conditions are detected that the storage device is experiencing reduced performance - see abstract). Further he discusses detecting a failing storage unit (see the brief description for Fig. 3). Lastly, Park's system allows for the system to detect when a upgrade is needed. More specifically, Park teaches using the performance of the storage device as a metric of determining when or if a device will fail. It is well known in the art that upgrading a storage device is needed when the performance of that unit is suffering. Parks system is capable of detecting this performance degradation, resulting in the replacement of the device.

It would have been obvious to one of ordinary skill in the art at the time of the invention for Kobayashi to further include Park's apparatus for storage unit replacement in non-redundant arrays. By doing so, Kobayashi could benefit by having a means of detecting failed or worn out storage devices, and replacing those devices in order to protect the data stored therein as taught by Park's – col. 3, lines 4-28).

11. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teaching of Kobayashi (US PG Publication 2001/0047460 A1) and Shea (US PG Publication 2004/0081087 A1), applied to claims 13 above, and in further view of Goodman (US PG Publication 2003/0065684 A1).

As for claims 18, though the combined teachings of Kobayashi and Shea disclose replacing the first storage media, they fail to teach using a library controller via a user interface to accomplish this task.

Goodman however teaches a system for logically assigning unique names to devices in a storage system. In his disclosure, Goodman teaches a library controller (Fig. 3, element 24) which interfaces with the user's host system (28) via an interface (29) – paragraph 0013, all lines.

It would have been obvious to one of ordinary skill in the art at the time of the invention for Kobayashi to further include Goodman's system for assigning unique names to his storage system. By doing so, Kobayashi would benefit by having a system that is capable of both uniquely assigning names to his storage devices, and capable of eliminating system downtime whenever the component is replaced as taught by Goodman in paragraph 0010, all lines.

12. Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teaching of Kobayashi (US PG Publication 2001/0047460 A1) and Shea (US PG Publication 2004/0081087 A1), as applied to claim 13 above, and in further view of Tanaka (US Patent 6,813,685 B1).

As for claims 19-21, though the combined teachings of Kobayashi and Shea meet the limitations of claim 13, they fail to meet the limitations of these three claims.

Tanaka however teaches a system for storing data and controlling the writing of redundant data including:

at least one RAID device coupled to said processor, wherein said processor obtains said copy of said data by RAID parity calculations (Fig. 1, elements 12-1 through 12-n disclose a RAID device (col. 3, lines 9-21);

a backup storage device coupled to said processor, wherein said processor obtains said copy of said data from said backup storage device (data is further copied to the redundant data disk (Fig. 1, element 13); and

one or more storage devices coupled to said processor, wherein said processor obtains said copy of said data from said one or more storage devices by reconstruction of data from said one or more sources (when data is recovered, the data must be reconstructed from more than one of the RAID disks in which the data is striped across).

It would have been obvious to one of ordinary skill in the art at the time of the invention for Kobayashi to further include Tanaka's system for writing redundant data. By doing so, Kobayashi would benefit by having a system in which access to both the data storing unit, and the redundant data storing unit can be comprehensively controlled by the controller. This effectively will lead to an enhancement in the reliability of the system, and more efficient communication as taught by Tanaka (col. 2, lines 6-22).

13. Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teaching of Kobayashi (US PG Publication 2001/0047460 A1) and Shea (US PG Publication 2004/0081087 A1), as applied to claim 13 above, and in further view of Timpanaro-Perrotta (US PG Publication 2003/0177324 A1).

As for claim 22-23, though Kobayashi teaches storing the worldwide name in the storage device (node), he fails to teach a cartridge memory (i.e. storage media) associated with the second device for storing the worldwide name.

Timpanaro-Perrotta however teaches a system for maintaining backup copies of file in a backup storage device, in which he teaches using a plurality of storage devices within his network, including tape cartridges (paragraph 0022, all lines).

It would have been obvious to one of ordinary skill in the art at the time of the invention for Kobayashi to further include Timpanaro-Perrotta's system of maintaining backup copies into his own system. By doing so, Kobayashi would have a means of both optimizing the restore operation, and minimizing the time data is unavailable to users as taught by Timpanaro-Perrotta in paragraphs 0006-0007, all lines.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig E. Walter whose telephone number is (571) 272-8154. The examiner can normally be reached on 8:30a - 5:00p M-F.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (571) 272-4210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Craig E Walter
Examiner
Art Unit 2188

CEW

3/14/02

MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER